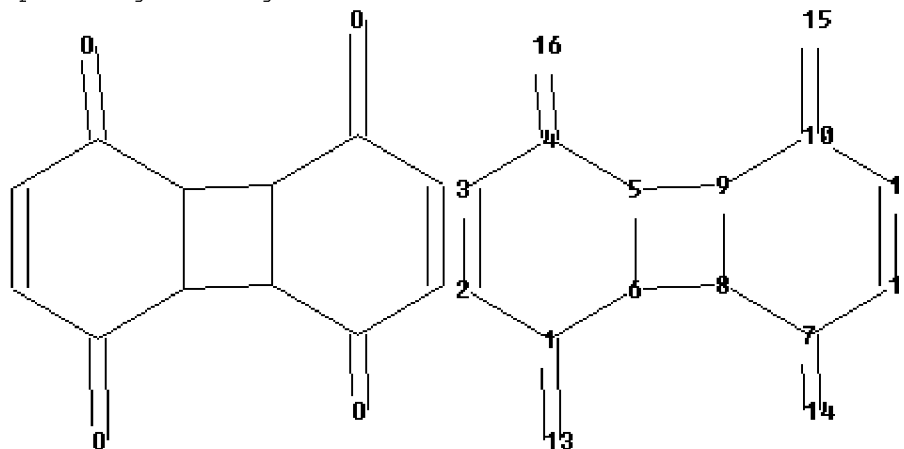


10598558 STN sss

=>

Uploading C:\Program Files\STNEXP\Queries\10598558a.str



chain nodes :

13 14 15 16

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12

chain bonds :

1-13 4-16 7-14 10-15

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 5-9 6-8 7-8 7-12 8-9 9-10 10-11 11-12

exact/norm bonds :

1-2 1-6 1-13 2-3 3-4 4-5 4-16 5-6 5-9 6-8 7-8 7-12 7-14 8-9 9-10 10-11
10-15 11-12

Match level :

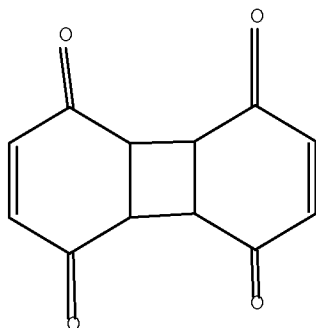
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom
11:Atom 12:Atom 13:CLASS 14:CLASS 15:CLASS 16:CLASS

L1 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1 STR



Structure attributes must be viewed using STN Express query preparation.

```
=> s l1
SAMPLE SEARCH INITIATED 14:45:11 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      25917 TO ITERATE

    7.7% PROCESSED      2000 ITERATIONS                      0 ANSWERS
INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01
```

```
=> s l3
L4          69 L3
```

```
=> s l3 and caplus/lc
  REGISTRY INITIATED
Substance data SEARCH and crossover from CAS REGISTRY in progress...
Use DISPLAY HITSTR (or FHITSTR) to directly view retrieved structures.
```

```
SYSTEM LIMITS EXCEEDED - SEARCH ENDED
=>
```

```
=> end
```

```
=>
ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
LOGOFF? (Y)/N/HOLD:n
```

```
=> s l4 and electrolumin?
      95090 ELECTROLUMIN?
L5          1 L4 AND ELECTROLUMIN?
```

```
=> d scan
```

```
L5      1 ANSWERS  CAPLUS  COPYRIGHT 2009 ACS on STN
IC      ICM  C09K011-06
        ICS  H05B033-14; H01L051-20; H01L051-30
CC      73-11 (Optical, Electron, and Mass Spectroscopy and Other Related
        Properties)
```

Section cross-reference(s): 22, 76

TI Electroluminescent composition without initial drop of efficiency
ST electroluminescent device aryl vinylene additive phenyl hydrophenylene
IT Electroluminescent devices
(electroluminescent composition using aryl vinylene and phenyl-tetrahydrobiphenylene-tetraone additives for reducing initial drop of efficiency)
IT 191286-52-9 864932-18-3
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(additive for stability improvement; electroluminescent composition using aryl vinylene and phenyl-tetrahydrobiphenylene-tetraone additives for reducing initial drop of efficiency)
IT 26009-24-5, Poly(p-phenylenevinylene) 50851-57-5 50926-11-9, Indium tin oxide 126213-51-2, Poly-3,4-ethylenedioxythiophene
RL: DEV (Device component use); USES (Uses)
(electroluminescent composition using aryl vinylene and phenyl-tetrahydrobiphenylene-tetraone additives for reducing initial drop of efficiency)

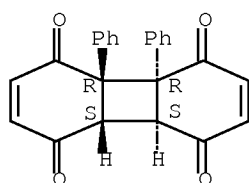
ALL ANSWERS HAVE BEEN SCANNED

=> d hitstr

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2009 ACS on STN

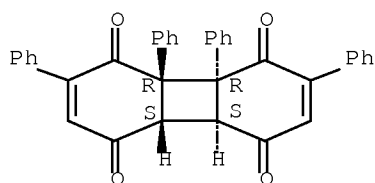
IT 191286-52-9 864932-18-3
RL: DEV (Device component use); MOA (Modifier or additive use); USES (Uses)
(additive for stability improvement; electroluminescent composition using aryl vinylene and phenyl-tetrahydrobiphenylene-tetraone additives for reducing initial drop of efficiency)
RN 191286-52-9 CAPLUS
CN 1,4,5,8-Biphenylenetetraone, 4a,4b,8a,8b-tetrahydro-4a,4b-diphenyl-, (4aR,4bR,8aS,8bS)- (CA INDEX NAME)

Absolute stereochemistry.



RN 864932-18-3 CAPLUS
CN 1,4,5,8-Biphenylenetetraone, 4a,4b,8a,8b-tetrahydro-2,7,8a,8b-tetraphenyl-, (4aS,4bS,8aR,8bR)- (CA INDEX NAME)

Absolute stereochemistry.



=> d hist

(FILE 'HOME' ENTERED AT 14:44:20 ON 22 JUL 2009)

FILE 'REGISTRY' ENTERED AT 14:44:47 ON 22 JUL 2009

L1 STRUCTURE UPLOADED
L2 0 S L1
L3 69 S L1 FULL

FILE 'CAPLUS' ENTERED AT 14:45:38 ON 22 JUL 2009

L4 69 S L3
S L3 AND CAPLUS/LC

FILE 'REGISTRY' ENTERED AT 14:46:35 ON 22 JUL 2009

FILE 'CAPLUS' ENTERED AT 14:46:45 ON 22 JUL 2009

L5 1 S L4 AND ELECTROLUMIN?

=> d ibib L4 abs hitstr 64-6

'64-6' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS ----- GI and AB
ALL ----- BIB, AB, IND, RE
APPS ----- AI, PRAI
BIB ----- AN, plus Bibliographic Data and PI table (default)
CAN ----- List of CA abstract numbers without answer numbers
CBIB ----- AN, plus Compressed Bibliographic Data
CLASS ----- IPC, NCL, ECLA, FTERM
DALL ----- ALL, delimited (end of each field identified)
DMAX ----- MAX, delimited for post-processing
FAM ----- AN, PI and PRAI in table, plus Patent Family data
FBIB ----- AN, BIB, plus Patent FAM
IND ----- Indexing data
IPC ----- International Patent Classifications
MAX ----- ALL, plus Patent FAM, RE
PATS ----- PI, SO
SAM ----- CC, SX, TI, ST, IT
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;
SCAN must be entered on the same line as the DISPLAY,
e.g., D SCAN or DISPLAY SCAN)
STD ----- BIB, CLASS

IABS ----- ABS, indented with text labels
IALL ----- ALL, indented with text labels
IBIB ----- BIB, indented with text labels

IMAX ----- MAX, indented with text labels
 ISTD ----- STD, indented with text labels

 OBIB ----- AN, plus Bibliographic Data (original)
 OIBIB ----- OBIB, indented with text labels

 SBIB ----- BIB, no citations
 SIBIB ----- IBIB, no citations

 HIT ----- Fields containing hit terms
 HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)
 containing hit terms
 HITRN ----- HIT RN and its text modification
 HITSTR ----- HIT RN, its text modification, its CA index name, and
 its structure diagram
 HITSEQ ----- HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and
 its structure diagram
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its
 structure diagram, plus NTE and SEQ fields
 KWIC ----- Hit term plus 20 words on either side
 OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

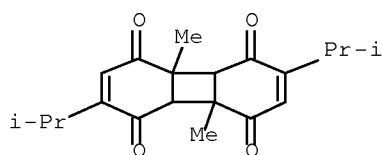
All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.
 ENTER DISPLAY FORMAT (BIB):end

=> d ibib L4 abs hitstr 64-69

L4 ANSWER 64 OF 69 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 1958:104030 CAPLUS Full-text
 DOCUMENT NUMBER: 52:104030
 ORIGINAL REFERENCE NO.: 52:18292c-d
 TITLE: Acetals of glyoxal
 AUTHOR(S): Tsatsaronis, Geo.
 SOURCE: Praktika tes Akademias Athenon (1956), 31, 330-5
 CODEN: PAATAK; ISSN: 0369-8106
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 AB 2,3-Dichloro-1,4-dioxane (6.3 g.) heated 20-25 hrs. with 12 cc. MeOH on an H2O bath until no more HCl was evolved, the brownish red product neutralized with CaCO3, extracted with Et2O, decolorized with C, filtered, dried, fractionated, and the fraction, b. 150-170°, redistd. yielded 0.5 g. tetramethyl acetal of glyoxal, b. 159-62°. Similarly were obtained the tetraethyl acetal, b. 200-3°, and the (1,1-pyrocatechol-2,2-glycol) diacetal, m. 75°. Also prepared were the phenylosazone of glyoxal, yellow needles, m. 179-80°, and the diethylene mercaptal, m. 133°.

IT ~~3182-48-7P~~, 1,4,5,8-Biphenylenetetrone,
 4a,4b,8a,8b-tetrahydro-2,6-diisopropyl-4a,8a-dimethyl-
 RL: PREP (Preparation)
 (preparation of)

RN 3182-48-7 CAPLUS
CN 1,4,5,8-Biphenylenetetrone, 4a,4b,8a,8b-tetrahydro-4a,8a-dimethyl-2,6-bis(1-methylethyl)- (CA INDEX NAME)



L4 ANSWER 65 OF 69 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1949:15180 CAPLUS Full-text

DOCUMENT NUMBER: 43:15180

ORIGINAL REFERENCE NO.: 43:2984h-i,2985a-d

TITLE: Photochemical reactions. XIII. Photochemical reactions of ethylenes with phenanthraquinone and with 1,2,3-triketones. Dimerization reactions in sunlight

AUTHOR(S): Schonberg, Alexander; Mustafa, Ahmed; Barakat, Mohamed Zaki; Latif, Nazih; Moubasher, Radwan; Mustafa, Akila

SOURCE: Journal of the Chemical Society (1948) 2126-9

CODEN: JCSOA9; ISSN: 0368-1769

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

OTHER SOURCE(S): CASREACT 43:15180

GI For diagram(s), see printed CA Issue.

AB cf. C.A. 42, 1586i. Phenanthrenequinone (1.09 g.) and 1 g. p-MeC₆H₄CH:CHPh in 50 cc. C₆H₆, exposed to sunlight 6 days, give 3-phenyl-2-p-tolylphenanthro[9',10',5,6]-p-dioxin, m. 247° (decomposition); PhEtC:CHPh gives the 2,3-diphenyl-3-ethyl analog, m. 169°; 2-C₁₀H₇CH:CHPh gives the 3-phenyl-2-(2-naphthyl) analog, m. 199°. Thermal decomposition gives the components. 1,2,3-Triketoindan (1 g.), 0.7 g. (PhCH:)₂, and 0.5 g. Na₂SO₄ in 25 cc. C₆H₆, exposed to sunlight 3 weeks, give 0.6 g. 1'-keto-2,3-diphenylindeno[2',3',5,6]-p-dioxin, light yellow, m. 210° (decomposition). Perinaphthindan-7,8,9-trione and (PhCH:)₂ (1 g. each) in 25 cc. C₆H₆, exposed to sunlight 10 days, give 0.9 g. 9'-keto-2,3-diphenylperinaphthindeno-[7',8',5,6]-p-dioxin (I), pale yellow, m. 220-2° (decomposition). 1,4-C₁₀H₆O₂ (II) (0.5 g.) in 12 cc. C₆H₆, exposed to sunlight 1 month, gives 0.2 g. of the dimer (III), m. 244-8° (decomposition); the solid II is unchanged after 2 months in sunlight; the 2,3-di-Me derivative of II is unchanged in sunlight (solid or C₆H₆ solution). The 2-Me derivative of II yields a dimer. 1,2-Benzanthracene in C₆H₆ (24 hrs.) gives a dimer, m. 235°. 1,3-Diphenylisobenzofuran, heated at 270° in dry CO₂, gives the dimer.

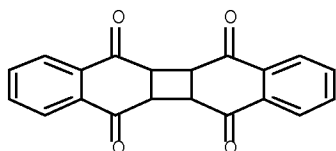
IT 17228-11-4F, Cyclobuta[1,2-b,3,4-b']dinaphthalene-5,6,11,12-tetrone, 5a,5b,11a,11b-tetrahydro-

RL: PREP (Preparation)

(preparation of)

RN 17228-11-4 CAPLUS

CN Dibenzo[b,h]biphenylene-5,6,11,12-tetrone, 5a,5b,11a,11b-tetrahydro- (CA INDEX NAME)



L4 ANSWER 66 OF 69 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1948:8741 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 42:8741

ORIGINAL REFERENCE NO.: 42:1925a-d

TITLE: Dimerization reactions in sunlight

AUTHOR(S): Schonberg, Alexander; Mustafa, Ahmed; Barakat, Mohamed Zaki

CORPORATE SOURCE: Fouad I Univ., Cairo

SOURCE: Nature (London, United Kingdom) (1947), 160, 401-2

CODEN: NATUAS; ISSN: 0028-0836

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB cf. C.A. 42, 1586i. Carcinogenic benz[a]anthracene in C₆H₆ under dry CO₂ forms readily the photodimer, of low solubility; obtained from tetralin at 100°, it m. 235° and is split by heat. When 1,3-diphenylisobenzofuran is heated in a sealed tube in CO₂ at 270° and the melt is chilled at 0° the dimer (I) is obtained. When 1,4-naphthoquinone (II) in C₆H₆ is exposed to sunlight it forms the photodimer (III), insol. in aqueous alkali, colorless crystals, m. about 244° (decomposition), forming II on heating. The enol form of III is related to biphenylene.

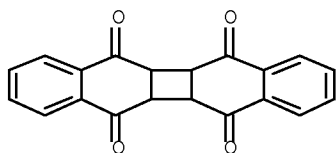
IT ~~17228-11-4P~~, Cyclobuta[1,2-b,3,4-b']dinaphthalene-5,6,11,12-tetrone, 5a,5b,11a,11b-tetrahydro-

RL: PREP (Preparation)

(preparation of)

RN 17228-11-4 CAPLUS

CN Dibenzo[b,h]biphenylene-5,6,11,12-tetrone, 5a,5b,11a,11b-tetrahydro- (CA INDEX NAME)



L4 ANSWER 67 OF 69 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1946:29287 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 40:29287

ORIGINAL REFERENCE NO.: 40:5719e-g

TITLE: β-Acylimino esters

AUTHOR(S): Horeau, Alain; Jacques, Jean

SOURCE: Compt. rend. (1946), 222, 1113-15

DOCUMENT TYPE: Journal

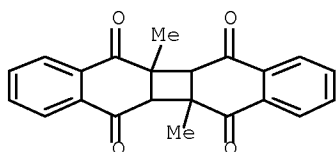
LANGUAGE: Unavailable

AB The reaction of α -Br esters (I) with nitriles in the presence of Zn yields β -keto esters (II). Excess of I and of Zn and prolonged heating gives in addition to II, β -acylimino esters. Addition of PhCN to Me₂CBrCO₂R (III) gives PhCOCMe₂CO₂R (R = Me, b14 140-2°; Et, b13 147-8°) and PhC(:NCOCHMe₂)CMe₂CO₂R (R = Me, m. 137-7.5°; Et, m. 161-2°). Reaction of III (R = Et) with 2-cyano-6-methoxynaphthalene (IV), m. 103°, gives 6,2-MeOC₁₀H₆COCMe₂CO₂R (R = Et), m. 72.5-3.5°, in 70% yield, and, on prolonged heating, the corresponding acylimino ester, m. 166-7°. Reaction of III (R = Me) and IV gives almost exclusively the acylimino ester, m. 200-1°. Alkaline hydrolysis of this ester gives the acid containing 1 mol. of C₆H₆ of crystallization (lost over 160°). The acid decarboxylates at 240° to 6,2-MeOC₁₀H₆C(:NCOCHMe₂)CHMe₂ (V), m. 141.5-2°. Acid hydrolysis of V gives 6-methoxy-2-isobutyronaphthone (VI), m. 57-8°. VI was prepared independently by condensing 2-MeOC₁₀H₇ with Me₂CHCOCl in PhNO₂.

IT 55721-23-8P, Cyclobuta[1,2-b,3,4-b']dinaphthalene-5,6,11,12-tetrone, 5a,5b,11a,11b-tetrahydro-5a,11a-dimethyl-
 RL: PREP (Preparation)
 (preparation of)

RN 55721-23-8 CAPLUS

CN Dibenzo[b,h]biphenylene-5,6,11,12-tetrone,
 5a,5b,11a,11b-tetrahydro-5a,11a-dimethyl- (CA INDEX NAME)



L4 ANSWER 68 OF 69 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1944:35012 CAPLUS [Full-text](#)

DOCUMENT NUMBER: 38:35012

ORIGINAL REFERENCE NO.: 38:5209d-h

TITLE: Dithymoquinone

AUTHOR(S): Smith, Lee I.; Tess, Roy W. H.

SOURCE: Journal of the American Chemical Society (1944), 66, 1323-5

CODEN: JACSAT; ISSN: 0002-7863

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB Dithymoquinone (I), prepared in 70% yield by exposure of a film of thymoquinone (II) to bright daylight for 5 days, m. 199.5-200°. I does not react with Ac₂O, AcCl, POCl₃ or H₂SO₄ in MeOH (heating at 100° for 30 min.). It is not oxidized by FeCl₃ in EtOH. I is reduced by NaHSO₃ to thymohydroquinone in 40 min.; under the same conditions, II is reduced in 30 sec. I is unchanged when treated with KOH in MeOH for 4 hrs. The absorption spectra of I and II give no evidence for the presence of a phenolic HO group in I. Two structures (III and IV) for I merit consideration. III represents I as a hexahydroanthracene derivative containing 2 tert-OH groups and 2 CO groups; IV represents I as a cyclobutane derivative containing 4 CO groups and no HO groups, formed in a manner analogous to the dimerization of PhCH:CHCO₂H and certain coumarins. These 2 structures are discussed in the light of present chemical knowledge concerning dithymoquinone. Although neither

structure is in accord with all of the known facts, IV is more satisfactory than III.

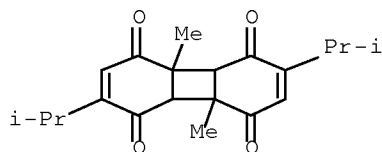
IT 3182-48-7P, Dithymoquinone

RL: PREP (Preparation)

(preparation of)

RN 3182-48-7 CAPLUS

CN 1,4,5,8-Biphenylenetetrone, 4a,4b,8a,8b-tetrahydro-4a,8a-dimethyl-2,6-bis(1-methylethyl)- (CA INDEX NAME)



L4 ANSWER 69 OF 69 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 1938:3485 CAPLUS Full-text

DOCUMENT NUMBER: 32:3485

ORIGINAL REFERENCE NO.: 32:532i,533a-i,534a-f

TITLE: Polymerization processes. Condensation of 1,4-naphthoquinone to 2,3-binaphthylenediquinone by means of pyridine in two stages

AUTHOR(S): Rosenhauer, Erich; Braun, Fritz; Pummerer, Rudolf; Riegelbauer, Georg

SOURCE: Berichte der Deutschen Chemischen Gesellschaft [Abteilung] B: Abhandlungen (1937), 70B, 2281-95
CODEN: BDCBAD; ISSN: 0365-9488

DOCUMENT TYPE: Journal

LANGUAGE: Unavailable

GI For diagram(s), see printed CA Issue.

AB cf. Diels and Kassebart, C. A. 31, 5338.3. When 1,4-naphthoquinone (I) is boiled in AcOH containing a little pyridine, 2 mols finally condense in the 2,3-positions with formation of the black quinhydrone (II) of 2,3,2',3'-binaphthylene-1,4,1',4'-diquinone (III). The H at the two 2,3-positions is in part shifted to the quinone O atoms of the same mol., and in part taken up by the excess of quinone or by atmospheric O. Boiling with PhNO₂ converts II into III. If I is boiled without acid in pyridine in a current of air, the greenish yellow crystals of III soon appear; they are best obtained (65%) by boiling I 1 hr. in PhNO₂ with a little pyridine and AcOH. To elucidate the mechanism of the reaction and compare the new III with the known binaphthylidiquinones the latter were prepared by previously known or by the above method but under milder conditions. When I is polymerized in pyridine-AcOH at 40-50° instead of the b. p., there is formed chiefly binaphthylquinhydrone (IV) which can be separated from the II formed simultaneously by virtue of its lesser solubility in hot PhCl. PbO₂ in PhCl-AcOH oxidizes IV to 2,2'-binaphthyl-1,4,1',4'-diquinone (V), which differs from III in its greater solubility, and lower m. p., its behavior toward alkali, and the behavior of its quinhydrone (IV). Boiling pyridine further condenses it to III, in the formation of which from I it is therefore probably an intermediate product. The isomeric 1,1'-binaphthyl-3,4,3',4'-diquinone (VI), which, as an o-quinone, is orange, can be prepared with a little AcOH and quinoline in alc. III is gradually converted into the vat dye when heated with Na₂S₂O₄ and NaOH, and air reppts. the yellow-brown dye, although not completely. The solution remains dark red and acids give a red-yellow substance which is stable to boiling 15% KOH with no reducing agent and

probably results from a hydrolytic cleavage of the 4-membered ring. The vat contains the tetrahydro compound of III, which is also formed with stannite and on acidification seps. as a colorless precipitate very rapidly turned green by the air. The tetra-Ac derivative (VI), however, prepared from III by reductive acetylation in pyridine with Ac₂O, AcOH and Zn dust, is stable in the air. III can be distilled in small portions with Zn dust, giving 15.5% of the parent hydrocarbon, 2,3-bisnaphthylene (VII), faintly straw-yellow, darkens 310°, m. 365°, forms with large excess of picric acid in dry benzene a very unstable red picrate, 2VII.3C₅H₂(NO₂)₃OH, m. above 260°, which is readily broken down into its components by solvents. In the preparation of III with AcOH-pyridine part of it seps. as II, which must be extracted with PhNO₂ and further oxidized. In this extraction there is first dissolved out a green substance which on cooling seps. in amorphous form but, when pure, forms magnificent prisms with steel-blue surface luster, insol. in low-boiling but soluble in high-boiling solvents with green color. Analysis shows that it is an anhydroquinhydrone, C₁₀H₁₈O₇ (VIII), probably of the structure, resulting from 2 mols. III by elimination of 1 mol. H₂O. It would then be a hydroquinone ether containing 2 free HO groups. It can also be obtained with special ease from the tetra-HO compound. Because of the slight solubility of VIII and its violet di-Ac derivative (IX), mol.-weight detns. could not be made on them. VIII rubbed with concentrated HNO₃ changes into the yellow III. Reductive acetylation of VIII gives a product (X), probably a hexa-Ac derivative of VII, in which, therefore, the 2 quinone halves of VII have been reduced and acetylated. The analytical results agree better for a triacetoxysnaphthylene, but X is much more difficultly soluble than VI and is pale yellow, properties not to be expected of a tri-AcO compound; moreover, X regenerates VIII with 50% H₂SO₄. Boiling 15% KOH with or without a current of air changes a fine suspension of III in 10-12 hrs. into golden-yellow prisms of difficultly soluble K salts. Dilution with water and acidification with mineral acids ppts. a red compound (XI), C₂₀H₁₀O₄, separating from AcOH in brown-red prisms with greenish metallic luster. CO₂ or dilute AcOH instead of mineral acids gives a dirty-yellow substance which on long standing slowly (immediately with mineral acids) turns red. The red solution in PhCl on shaking with Na₂CO₃ or NaHCO₃ forms a yellow suspension. Alc. KOH likewise converts the red XI into a yellow salt. Concentrated NH₄OH, alc. and pyridine dissolve it with yellow color. The red XI precipitated with HCl contains no halogen but probably still has a quinone group for it forms with boiling AcOH and Zn dust a colorless leuco solution which again becomes red in the air. The leuco compound is readily converted into a triacetate C₂₆H₁₈O₇ (XII). It has thus far not been possible to acetylate XI itself, although it has the composition of a hydroxyquinone. The following mechanism is suggested, with all reserve: the 4-membered ring in III is hydrolyzed by boiling alkali, giving a yellow 3-hydroxy-2,2'-bisnaphthyldiquinone, one-half of which is reduced by the alkaline decomposition, giving 1',4',3-trihydroxybisnaphthyl-1,4-quinone, also yellow but converted by mineral acids into the red anhydro compound (XI) yielding on reductive acetylation the dihydro triacetate (XII). Along with XI was isolated a little 3,3'-dihydroxy-2,2'-bisnaphthyl-1,4,1',4'-diquinone, yellow, m. 272-5°. VI-(Bi-β-naphthoquinone), orange prisms with 0.5 mol. PhNO₂, m. 288-90°; it loses most of the PhNO₂ in 3 hrs. at 180°. V-(Bi-α-naphthoquinone), yellow needles, decomp. 274-5° (Cu block preheated to 240°), is reduced by AcOH-Zn dust or alkaline SnCl₂ to the colorless 1,4,1',4'-tetrahydroxy-2,2'-bisnaphthyl (tetraacetate, m. 227°), which becomes blue-gray on drying and with V in boiling AcOH gives IV, decomposing above 260°. III, yellow prisms, soluble in concentrated H₂SO₄ with yellow color, repptd. on dilution with water, insol. in NaOH, m. above 400°, becomes brownish at 410°, blackens at 450-60°. 1,4,1',4'-Tetraacetoxy-2,3,2',3'-bisnaphthylene (VI), hygroscopic prisms, m. 278-80° (decomposition). The tetra-HO compound (tetrahydro derivative of III), decomp. above 250°, at once forms with NaOH a greenish yellow vat rapidly changing through yellow-brown to brick-red, also forms in NH₄OH a vat which, however, does not change to brick-

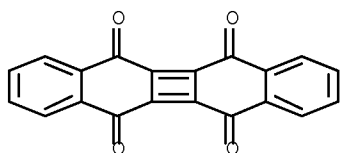
red; on long heating of the deep green solution in pyridine or PhNO₂ III seps.; it is insol. in concentrated H₂SO₄; hot Ac₂O containing a little H₂SO₄ gives a red-violet solution which on cooling deposits IX. VIII, m. about 382° on a Cu block preheated to 330°. IX, from VIII in boiling pyridine-AcOH, m. 258° (decomposition) when placed on a Cu block at 280°, changes to green when heated with concentrated H₂SO₄ and to yellow when covered with concentrated HNO₃. X, faintly greenish yellow prisms forming dilute solns. with faint violet fluorescence and yellow more concentrated solns., decomp. above 300°. XI, m. 296° (Cu block preheated to 270°). XII, decomp. 293°, stable toward KMnO₄ in pyridine.

IT 854452-03-2P, Cyclobuta[1,2-b,3,4-b']dinaphthalene-5,6,11,12-tetrone

RL: PREP (Preparation)
(preparation of)

RN 854452-03-2 CAPLUS

CN Dibenzo[b,h]biphenylene-5,6,11,12-tetrone (CA INDEX NAME)



Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 21 JUL 2009 HIGHEST RN 1166462-88-9

DICTIONARY FILE UPDATES: 21 JUL 2009 HIGHEST RN 1166462-88-9

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH January 9, 2009.

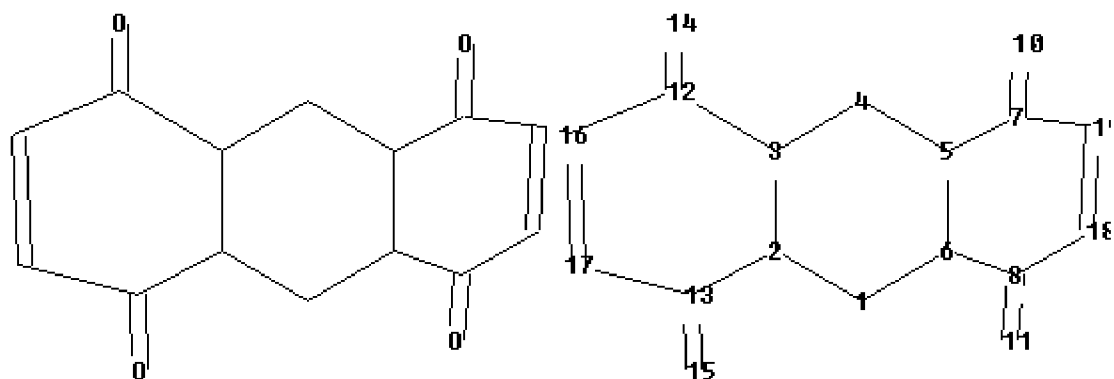
Please note that search-term pricing does apply when conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and predicted properties as well as tags indicating availability of experimental property data in the original document. For information on property searching in REGISTRY, refer to:

<http://www.cas.org/support/stngen/stdoc/properties.html>

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ring nodes :
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ring bonds :
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18-19
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G1:O,N

Match level :

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12:Atom 13:Atom 14:CLASS 15:CLASS 16:Atom 17:Atom 18:Atom 19:Atom

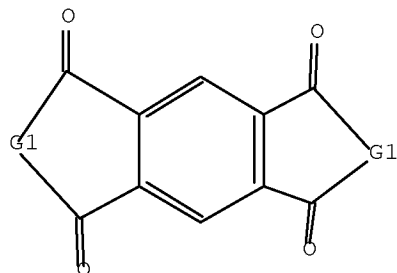
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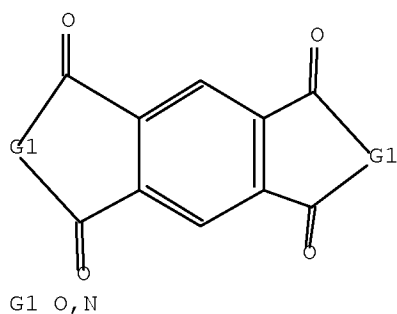
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G1 O,N

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L1 HAS NO ANSWERS
L1 STR



Structure attributes must be viewed using STN Express query preparation.

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INCOMPLETE SEARCH (SYSTEM LIMIT EXCEEDED)
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 208983 TO 221417
PROJECTED ANSWERS: 13621 TO 16937

L2 50 SEA SSS SAM L1

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L3 47 L2

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95090 ELECTROLUMIN?
L4 0 L3 AND ELECTROLUMIN?

=> s l3 and lumin?
357651 LUMIN?
L5 1 L3 AND LUMIN?

=> d ibib abs hitstr

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2009 ACS on STN
ACCESSION NUMBER: 2001:296995 CAPLUS Full-text
DOCUMENT NUMBER: 135:86086
TITLE: Syntheses, spectroelectrochemistry and photoinduced
electron-transfer processes of novel Ru and Os dyad
and triad complexes with functionalized diimide
ligands
AUTHOR(S): Hossain, M. Delower; Haga, Masa-Aki; Gholamkhash,

Bobak; Nozaki, Koichi; Tsushima, Minoru; Ikeda, Noriaki; Ohno, Takeshi
 CORPORATE SOURCE: Department of Applied Chemistry, Faculty of Science and Engineering, Chuo University, Tokyo, 112-8551, Japan
 SOURCE: Collection of Czechoslovak Chemical Communications (2001), 66(2), 307-337
 CODEN: CCCCAK; ISSN: 0010-0765
 PUBLISHER: Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
 DOCUMENT TYPE: Journal
 LANGUAGE: English
 OTHER SOURCE(S): CASREACT 135:86086

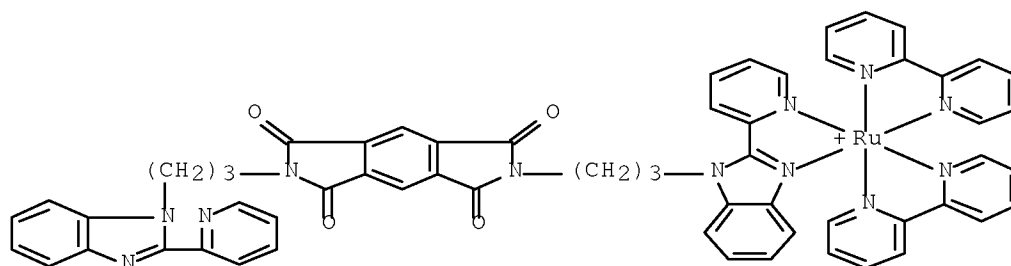
AB Mono- and dinuclear Ru complexes containing a bridging ligand, L-diimide-L (L = 2-(2-pyridyl)benzimidazole; diimide = benzene-1,2:4,5-bis(dicarboximide) (bdi; pyromellitimide) or naphthalene-1,8:4,5-bis(dicarboximide) (ndi)), with either propane or xylene group as linkers, were prepared. The mono- and dinuclear Ru complexes containing the bdi or ndi ligand, exhibit characteristic metal-to-ligand charge transfer (MLCT) transition at 458 nm. The mono- and dinuclear Ru/Os complexes exhibit a rich redox chemical arising from both M(II) to M(III) oxidation and ligand-based consecutive reduction of diimide and 2,2'-bipyridine (bpy) ligands. The emission decays fit well with double- or triple-exponential decay models. The nonexponential decay curve reveals the existence of several conformers in solution due to the flexible propane or p-xylene linker. The much shorter emission lifetimes of the [M(bpy)₂(L-diimide-L)] complexes compared with the parent [M(bpy)₂L] indicates the intramol. electron-transfer from the excited M(bpy)₂ moiety to the diimide. The fastest rates of electron transfer ($3 \times 10^{10} \text{ s}^{-1}$) are attributable to the folded conformers suitable for the electron donor/acceptor through-space interaction. A time-resolved absorption spectroscopic study of the dinuclear bdi and ndi complexes revealed appearance of the electron-transfer products, M(III) and the diimide radical anion, and their rapid disappearance. The effect of the linkers of the ligand L-diimide-L on the rates of electron transfer and the back electron transfer is also discussed.

IT 346605-94-5

RL: FMU (Formation, unclassified); PRP (Properties); FORM (Formation, nonpreparative)
 (elec. potential of couple containing)

RN 346605-94-5 CAPLUS

CN Ruthenium(1+), bis(2,2'-bipyridine-κN1,κN1') [2-[3-[2-(2-pyridinyl-κN)-1H-benzimidazol-1-yl-κN3]propyl]-6-[3-[2-(2-pyridinyl)-1H-benzimidazol-1-yl]propyl]benzo[1,2-c:4,5-c']dipyrrole-1,3,5,7(2H,6H)-tetrone]-, (OC-6-33)- (9CI) (CA INDEX NAME)



REFERENCE COUNT:

45

THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS

=> d hist

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FILE 'REGISTRY' ENTERED AT 16:50:16 ON 22 JUL 2009

L1 STRUCTURE UPLOADED

L2 50 S L1

FILE 'CAPLUS' ENTERED AT 16:50:57 ON 22 JUL 2009

L3 47 S L2

L4 0 S L3 AND ELECTROLUMIN?

L5 1 S L3 AND LUMIN?

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L3 ANSWER 46 OF 47 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:261342 CAPLUS Full-text

DOCUMENT NUMBER: 134:303012

TITLE: Alkaline negative development-type photosensitive resin composition, manufacture of pattern, and electronic parts

INVENTOR(S): Komatsu, Hiroshi; Kojima, Yasunori; Watanabe, Naoki

PATENT ASSIGNEE(S): Hitachi Chemical Du Pont Micro System Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 18 pp.

CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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JP 2001100409	A	20010413	JP 1999-280426	19990930
PRIORITY APPLN. INFO.:			JP 1999-280426	19990930

AB The alkaline neg. development-type photosensitive resin composition comprises (a) a photosensitive polyimide precursor which is soluble in an aqueous alkaline solution and has a reactive unsatd. functional group in the chain, (b) an addition polymerizable compound which contains a reactive unsatd. functional group and is free of covalent electrons in the backbone chain, and (c) a photosensitizing agent. The manufacture of a pattern using above resin composition and electronic parts are also claimed. This photosensitive resin has little swelling during the development and also has excellent patterning, adhesion, crosslinking properties.

IT ~~333999-65-8P~~

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

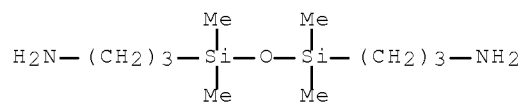
(alkaline neg. development-type photosensitive resin composition for patterning of electronic parts)

RN 333999-65-8 CAPLUS

CN Benzoic acid, 3,5-diamino-, polymer with 1,3-benzenediamine, 1H,3H-benzo[1,2-c:4,5-c']difuran-1,3,5,7-tetrone, 2-hydroxyethyl 2-methyl-2-propenoate and 3,3'-(1,1,3,3-tetramethyl-1,3-disiloxanediyl)bis[1-propanamine], graft (9CI) (CA INDEX NAME)

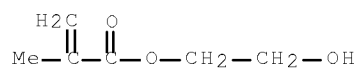
CM 1

CRN 2469-55-8
CMF C10 H28 N2 O Si2



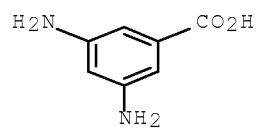
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CRN 868-77-9
CMF C6 H10 O3



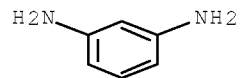
CM 3

CRN 535-87-5
CMF C7 H8 N2 O2



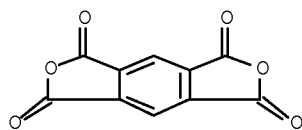
CM 4

CRN 108-45-2
CMF C6 H8 N2



CM 5

CRN 89-32-7
CMF C10 H2 O6



L3 ANSWER 47 OF 47 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2001:256785 CAPLUS Full-text

DOCUMENT NUMBER: 135:46689

TITLE: Novel polypyromellitimides and their liquid crystal aligning properties

AUTHOR(S): Jung, J. C.; Lee, K. H.; Sohn, B. S.; Lee, S. W.; Ree, M.

CORPORATE SOURCE: Center for Advanced Functional Polymers/Polymer Research Institute/Department of Materials Science & Engineering, Pohang University of Science and Technology, Pohang, 790-784, S. Korea

SOURCE: Macromolecular Symposia (2001), 164(Reactive Polymers), 227-238

CODEN: MSYMEC; ISSN: 1022-1360

PUBLISHER: Wiley-VCH Verlag GmbH

DOCUMENT TYPE: Journal

LANGUAGE: English

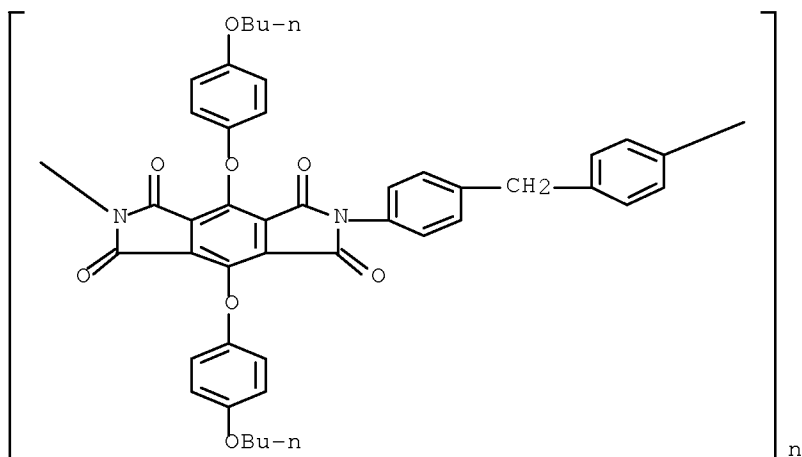
AB Various aromatic poly{3,6-bis[(4-n-alkyl oxy)phenyl oxy]-pyromellitimide}s [poly(Ar-Cm-PMDA)s, m = 1, 4, 8, 12] were prepared in film form by routine two-step condensation of 3,6-bis[(4-n-alkyl oxy)phenyl oxy]pyromellitic dianhydrides (Cm-PMDAs) with various aromatic diamines. After characterization of their chemical structures their solution, thermal and liquid crystal (LC)-aligning properties in terms of pretilt angle at various rubbing densities were measured and discussed with respect to their backbone structures. All polyimide films showed excellent thermal stability and homogeneous LC alignment, but the poly(p-phenylene-C12-PMDA) exhibited completely homeotropic alignment while the pretilt angle values of poly(p-phenylene-C8-PMDA) varied with varying rubbing d.

IT 344775-69-5P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation) (polypyromellitimides and their liquid crystal aligning properties)

RN 344775-69-5 CAPLUS

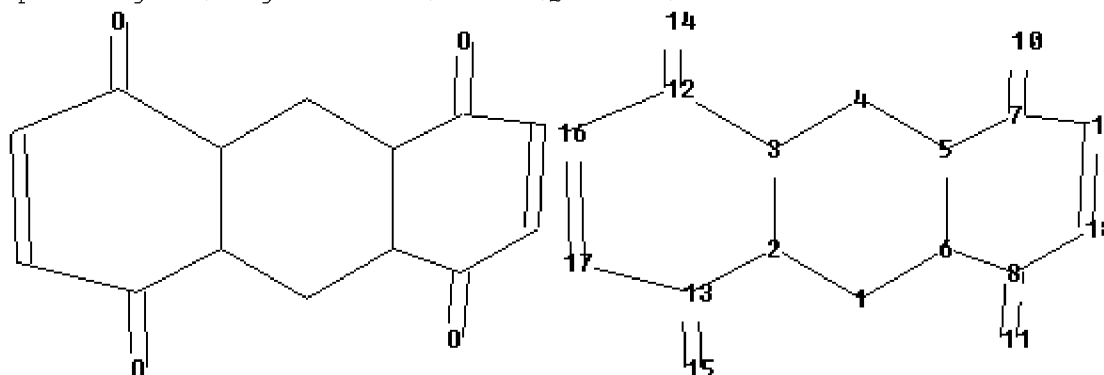
CN Poly[[4,8-bis(4-butoxyphenoxy)-5,7-dihydro-1,3,5,7-tetraoxobenzo[1,2-c:4,5-c']dipyrrole-2,6(1H,3H)-diyl]-1,4-phenylenemethylene-1,4-phenylene] (CA INDEX NAME)



REFERENCE COUNT: 30 THERE ARE 30 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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ring nodes :

1 2 3 4 5 6 7 8 12 13 16 17 18 19

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ring bonds :

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exact/norm bonds :

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G1:O,N

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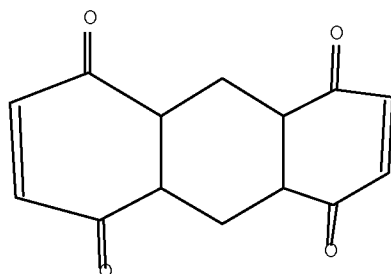
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L1 STRUCTURE UPLOADED

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L1 HAS NO ANSWERS

L1 STR



G1 O,N

L4 149 L3

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95090 ELECTROLUMIN?

L5 3 L4 AND ELECTROLUMIN?

=> d ibib abs hitstr 1-3

L5 ANSWER 1 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN

ACCESSION NUMBER: 2006:1253271 CAPLUS Full-text

DOCUMENT NUMBER: 145:514790

TITLE: Compounds comprising a linear series of five fused carbon rings, and preparation thereof

INVENTOR(S): Fallis, Alexander Graham; Benard, Christophe; Vancrey, Kelly; Geng, Zhe

PATENT ASSIGNEE(S): Can.

SOURCE: U.S. Pat. Appl. Publ., 26pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060267004	A1	20061130	US 2006-439309	20060524
CA 2547799	A1	20061127	CA 2006-2547799	20060524
PRIORITY APPLN. INFO.:			US 2005-684948P	P 20050527

AB The present application discloses methods for the production of organic compds. comprising a linear series of five fused carbon rings. Such compds. are useful in the production of electronic components, devices and materials. For example the methods disclosed permit the production of 2,9- and 2,10-disubstituted pentacene compds. that present particularly advantageous properties for the manufacture of semiconductor materials, or ink jet fabrication, and may be used in devices such as for example thin film transistors and solar cells. Also disclosed are compds. that are excellent candidates for use in the manufacture of semiconductor materials, and other

components of electronic systems, by virtue of their solubility, crystal packing geometries, and electronic properties.

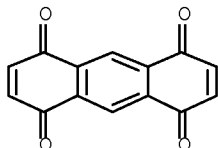
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869888-15-3P 869888-17-5P 869888-19-7P
869888-21-1P 869888-23-3P 869888-25-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(pentacene derivative production for use as semiconductor material for electronic devices)

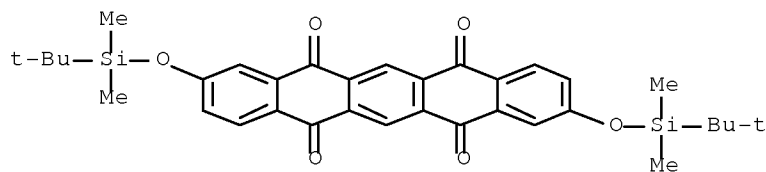
RN 5101-07-5 CAPLUS

CN 1,4,5,8-Anthracenetetrone (CA INDEX NAME)



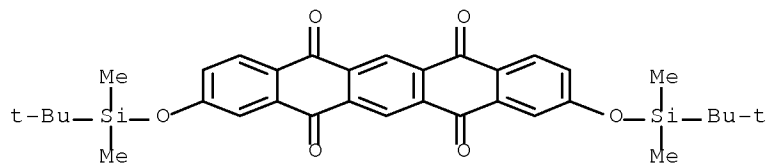
RN 869888-13-1 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,9-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (CA INDEX NAME)



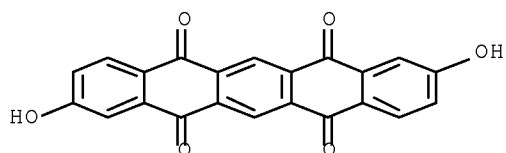
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CN 5,7,12,14-Pentacenetetrone, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (CA INDEX NAME)



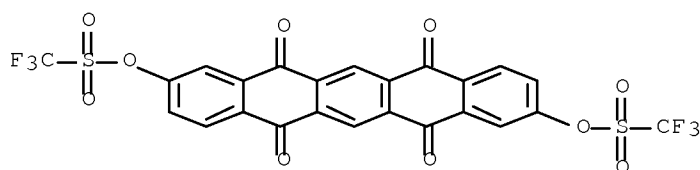
RN 869888-17-5 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,9-dihydroxy- (CA INDEX NAME)



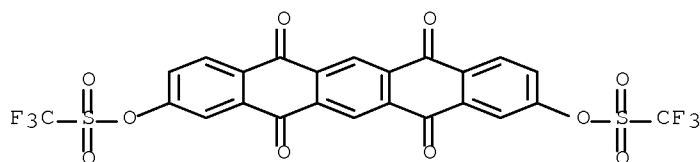
RN 869888-19-7 CAPLUS

CN Methanesulfonic acid, 1,1,1-trifluoro-,
1,1'-(5,7,12,14-tetrahydro-5,7,12,14-tetraoxo-2,9-pentacenediyl) ester
(CA INDEX NAME)



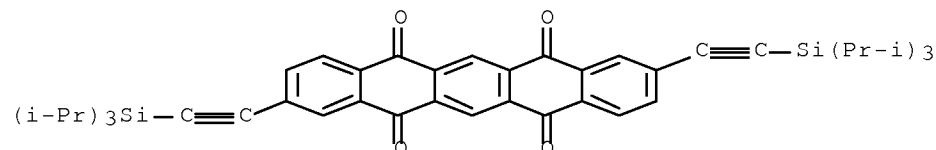
RN 869888-21-1 CAPLUS

CN Methanesulfonic acid, 1,1,1-trifluoro-,
1,1'-(5,7,12,14-tetrahydro-5,7,12,14-tetraoxo-2,10-pentacenediyl) ester
(CA INDEX NAME)



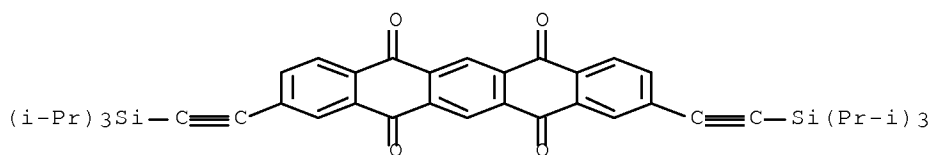
RN 869888-23-3 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,9-bis[2-[tris(1-methylethyl)silyl]ethynyl]-
(CA INDEX NAME)



RN 869888-25-5 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,10-bis[2-[tris(1-methylethyl)silyl]ethynyl]-
(CA INDEX NAME)



L5 ANSWER 2 OF 3 CAPLUS COPYRIGHT 2009 ACS on STN
 ACCESSION NUMBER: 2005:1308178 CAPLUS Full-text
 DOCUMENT NUMBER: 144:62541
 TITLE: Compounds comprising a linear series of five fused carbon rings, and preparation thereof
 INVENTOR(S): Fallis, Alexander Graham; Heuft, Matthew Allen; Benard, Christophe
 PATENT ASSIGNEE(S): University of Ottawa, Can.
 SOURCE: U.S. Pat. Appl. Publ., 31 pp.
 CODEN: USXXCO
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

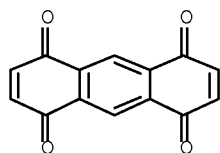
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20050274945	A1	20051215	US 2005-130190	20050517
PRIORITY APPLN. INFO.:			US 2004-571940P	P 20040518

AB The present application discloses methods for the production of organic compds. comprising a linear series of five fused carbon rings. Such compds. are useful in the production of electronic components, devices and materials. For example the methods disclosed permit the production of 2,9- and 2,10-disubstituted pentacene compds. that present particularly advantageous properties for the manufacture of semiconductor materials, and may be used in devices such as for example thin film transistors and solar cells. Also disclosed are compds. that are excellent candidates for use in the manufacture of semiconductor materials, and other components of electronic systems, by virtue of their solubility, crystal packing geometries, and electronic properties.

IT 5101-07-5P, 1,4,5,8-Anthracenetetrone 869888-13-1P
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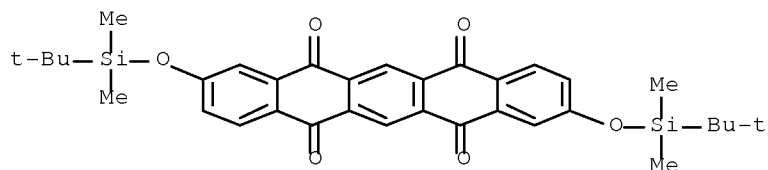
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (pentacene derivative production for use as semiconductor material for electronic devices)

RN 5101-07-5 CAPLUS
 CN 1,4,5,8-Anthracenetetrone (CA INDEX NAME)



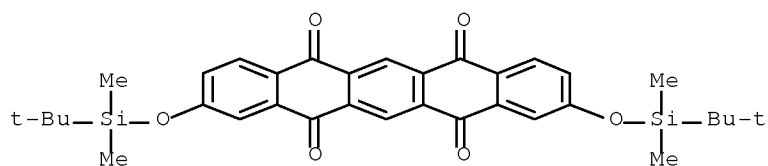
RN 869888-13-1 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,9-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-
(CA INDEX NAME)



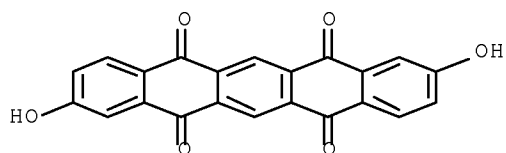
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CN 5,7,12,14-Pentacenetetrone, 2,10-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]- (CA INDEX NAME)



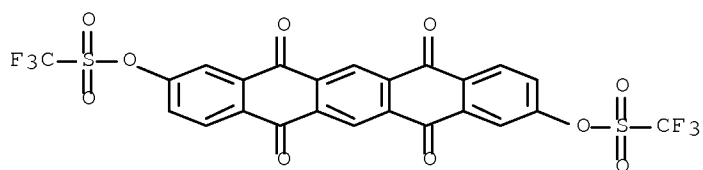
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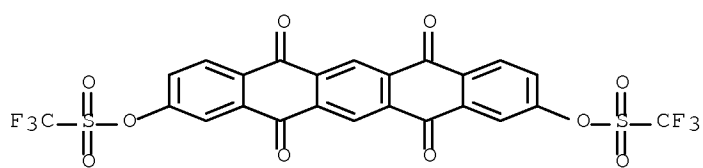


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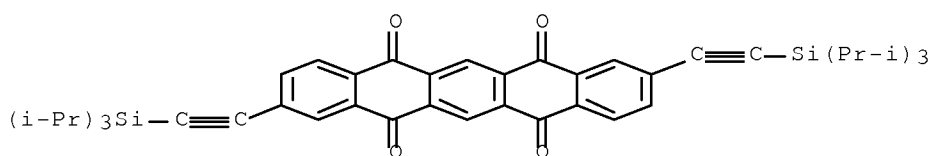
CN Methanesulfonic acid, 1,1,1-trifluoro-,
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(CA INDEX NAME)



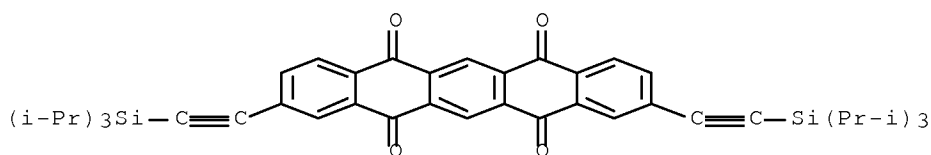
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 1,1'-(5,7,12,14-tetrahydro-5,7,12,14-tetraoxo-2,10-pentacenediyl) ester
 (CA INDEX NAME)



RN 869888-23-3 CAPLUS
 CN 5,7,12,14-Pentacenetetrone, 2,9-bis[2-[tris(1-methylethyl)silyl]ethynyl]-
 (CA INDEX NAME)



RN 869888-25-5 CAPLUS
 CN 5,7,12,14-Pentacenetetrone, 2,10-bis[2-[tris(1-methylethyl)silyl]ethynyl]-
 (CA INDEX NAME)



TITLE: Compounds comprising a linear series of five fused carbon rings, and preparation thereof
 INVENTOR(S): Fallis, Alexander Graham; Heuft, Matthew A.
 PATENT ASSIGNEE(S): University of Ottawa, Can.
 SOURCE: Can. Pat. Appl., 80 pp.
 CODEN: CPXXEB
 DOCUMENT TYPE: Patent
 LANGUAGE: English
 FAMILY ACC. NUM. COUNT: 1
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CA 2467599	A1	20051118	CA 2004-2467599	20040518

PRIORITY APPLN. INFO.: CA 2004-2467599 20040518

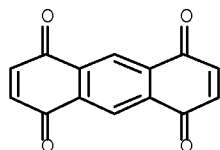
AB Methods for the production of organic compds. comprising a linear series of five fused carbon rings are described. Such compds. are useful in the production of electronic components, devices and materials. The methods disclosed permit the production of 2,9- and 2,10-disubstituted pentacene compds. that present particularly advantageous properties for the manufacture of semiconductor materials, and may be used in devices such as thin-film transistors and solar cells. Also disclosed are compds. that are excellent candidates for use in the manufacture of semiconductor materials, and other components of electronic systems, by virtue of their solubility, crystal packing geometries, and electronic properties.

IT 5101-07-5P, 1,4,5,8-Anthracenetetrone 869888-13-1P
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RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
 (pentacene derivative production for use as semiconductor material for electronic devices)

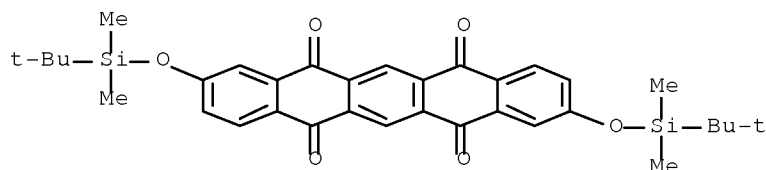
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CN 1,4,5,8-Anthracenetetrone (CA INDEX NAME)



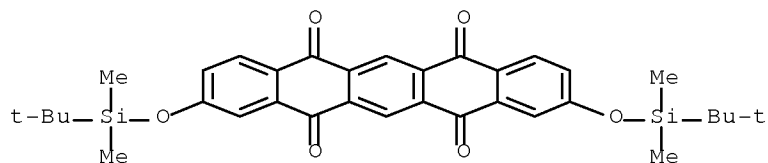
RN 869888-13-1 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,9-bis[[(1,1-dimethylethyl)dimethylsilyl]oxy]-
 (CA INDEX NAME)



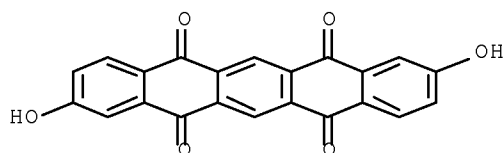
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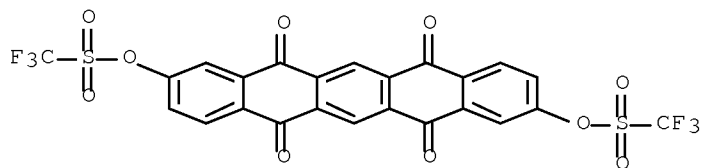
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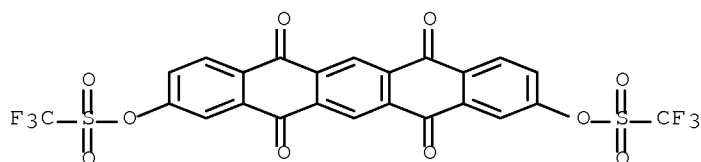
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CN Methanesulfonic acid, 1,1,1-trifluoro-, 1,1'-(5,7,12,14-tetrahydro-5,7,12,14-tetraoxo-2,9-pentacenediyl) ester (CA INDEX NAME)



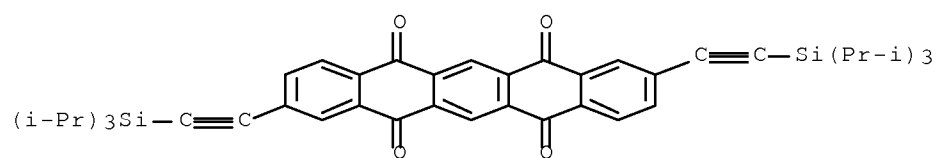
RN 869888-21-1 CAPLUS

CN Methanesulfonic acid, 1,1,1-trifluoro-, 1,1'-(5,7,12,14-tetrahydro-5,7,12,14-tetraoxo-2,10-pentacenediyl) ester (CA INDEX NAME)



RN 869888-23-3 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,9-bis[2-[tris(1-methylethyl)silyl]ethynyl]-
(CA INDEX NAME)



RN 869888-25-5 CAPLUS

CN 5,7,12,14-Pentacenetetrone, 2,10-bis[2-[tris(1-methylethyl)silyl]ethynyl]-
(CA INDEX NAME)

